

MIDWAY

**MARCH 1995
16-40039-101**

MORTAL KOMBAT

3

OPERATION MANUAL

Operation & Adjustments • Testing & Problem Diagnosis
Parts Information • Wiring Diagrams

MORTAL KOMBAT

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INSTRUCTIONS

Insert Coin(s).

In a two player game, the loser pays and the winner stays.

Press the Punch and Kick buttons to attack an opponent.

Press the Run button to make your on-screen character run.

**Use the joystick to make the on-screen character jump, duck,
move left, and move right.**

**Use different joystick and button combinations to discover
secret moves.**

MORTAL KOMBAT

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A stylized, italicized version of the 'MORTAL KOMBAT' text with a large '3' centered below it, all in a light gray, textured font.

Information current at time of release.

MIDWAY Manufacturing Company reserves the rights to make modifications and improvements to its products. The specifications and parts identified in this manual are subject to change without notice.

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SECTION
ONE

OPERATION

SAFETY NOTICES

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your game for play.



CAUTION

AC POWER CONNECTION. Before connecting the game to the AC power source, verify the Voltage Selection Chart jumper wires are installed correctly for the line voltage in your area. For details refer to Section 3.

PROPERLY GROUND THE GAME. To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. MIDWAY games should only be plugged into a grounded 3-wire outlet.

NOTE:

The control panel is removable. Ensure that the ground braid is securely attached to the control panel after servicing.

DISCONNECT POWER DURING REPAIRS. To avoid electrical shock, disconnect the game from the AC power source before removing or repairing any part of the game.

USE THE PROPER FUSES. To avoid electrical shock, replacement fuses must match the original fuses in fuse type, voltage rating, and current rating.

MONITOR PRECAUTIONS. When removing or repairing the monitor, extra precautions must be taken to avoid electrical shock because high voltages may exist within the monitor circuitry and cathode ray tube (CRT) even after power has been disconnected. Do not touch internal parts of the monitor with your hands or metal objects! Always discharge the CRT by the following method: Attach one end of a large, well-insulated, 20kV jumper to ground. Momentarily touch the free end of the grounded jumper to the anode by sliding it under the anode cap. Wait two minutes and discharge the anode again.

HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.

!! ATTENTION !!

PROPERLY ATTACH ALL CONNECTORS. Be sure that the connectors on each printed circuit board (PCB) are properly connected. If they do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. All connectors are keyed to fit specific pins on each board.

SETUP PROCEDURE

INSTALLATION & INSPECTION

Game Location	<u>Power</u>	<u>Temperature</u>	<u>Humidity</u>
Requirements	100VAC @ 50Hz 3.0 Amps 120VAC @ 60Hz 3.0 Amps 230VAC @ 50Hz 2.0 Amps	32°F to 100°F (0°C to 38°C)	Not to exceed 95% relative
Cabinet Statistics	<u>Dimensions</u>	<u>Weight</u>	
	Width 27" - Depth 41" - Height 73"	Approximately 369Lbs	

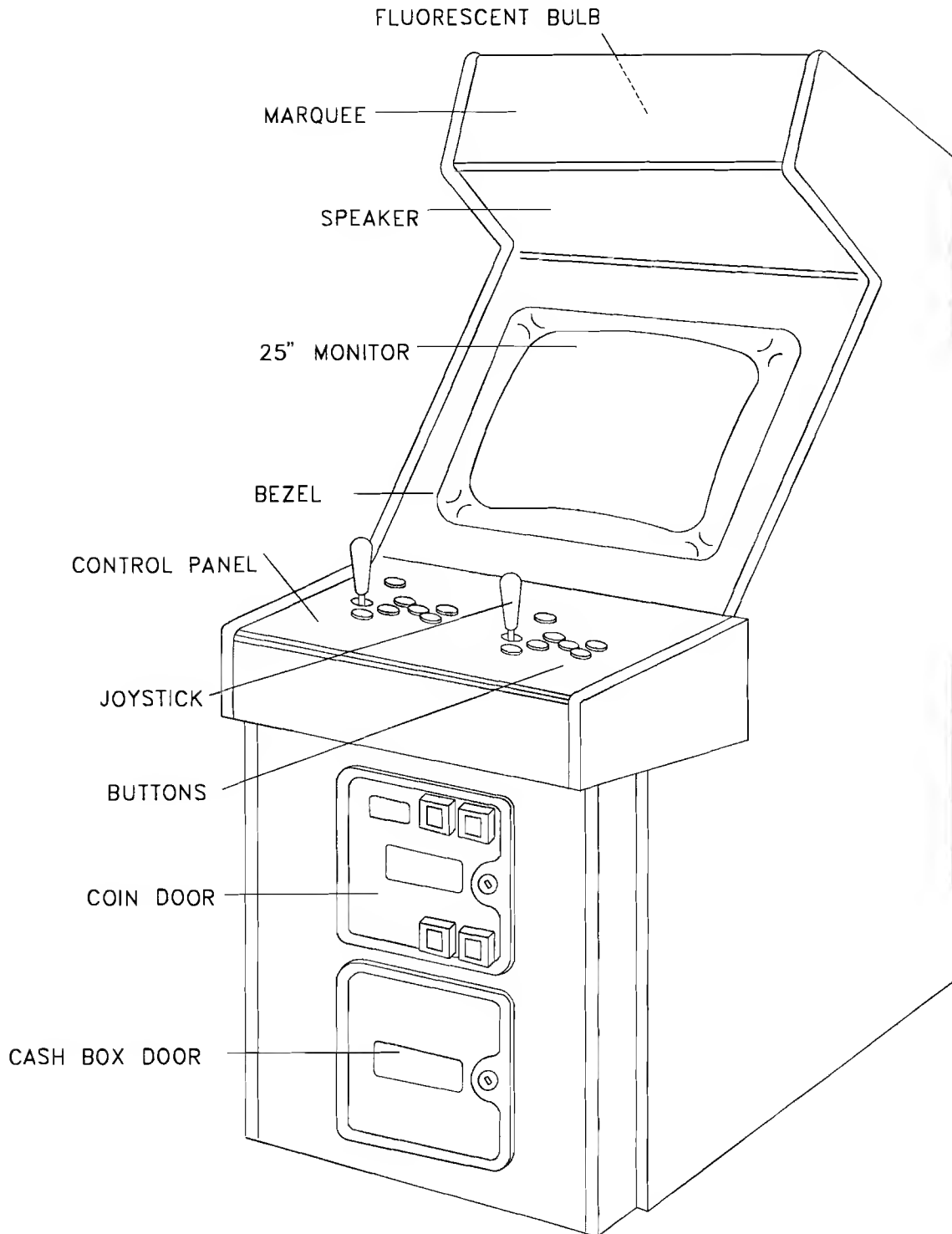
1. Remove all items from the shipping containers and set them aside. Inspect the exterior of the cabinet and the control panel for any damage.
2. The keys for the coin door and the rear door are attached to one of the joysticks. Unlock and open the coin and cash box doors. Remove the spare parts stored in the cash box.
3. Remove the screws holding the rear door then unlock and remove the door. Inspect the cabinet interior for any signs of damage. Check all major assemblies to assure that they are mounted securely.
4. Refer to the Cabinet Wiring Diagram (Section 3), and check to see that all cable connectors are correctly secured. *Do not force connectors.* Watch for damaged connectors and avoid making reversed connections.
5. If a padlock is desired, turn the rear door hasp so that it protrudes from the hole in the back of the cabinet. Remove the two nuts inside the cabinet, at the top and middle of the rear door opening. Then slide the hasp off of the bolts. Turn the hasp, slide it back on the bolts and replace the nuts.
6. Next, locate the four leg levelers among the spare parts in the cash box. There are four threaded holes on the bottom of the cabinet; one in each corner. Place one leg leveler (with its hex nut) in each of the threaded holes. Lower each leg leveler until the cabinet is stable and level.

!! WARNING !!

The cabinet is top heavy.

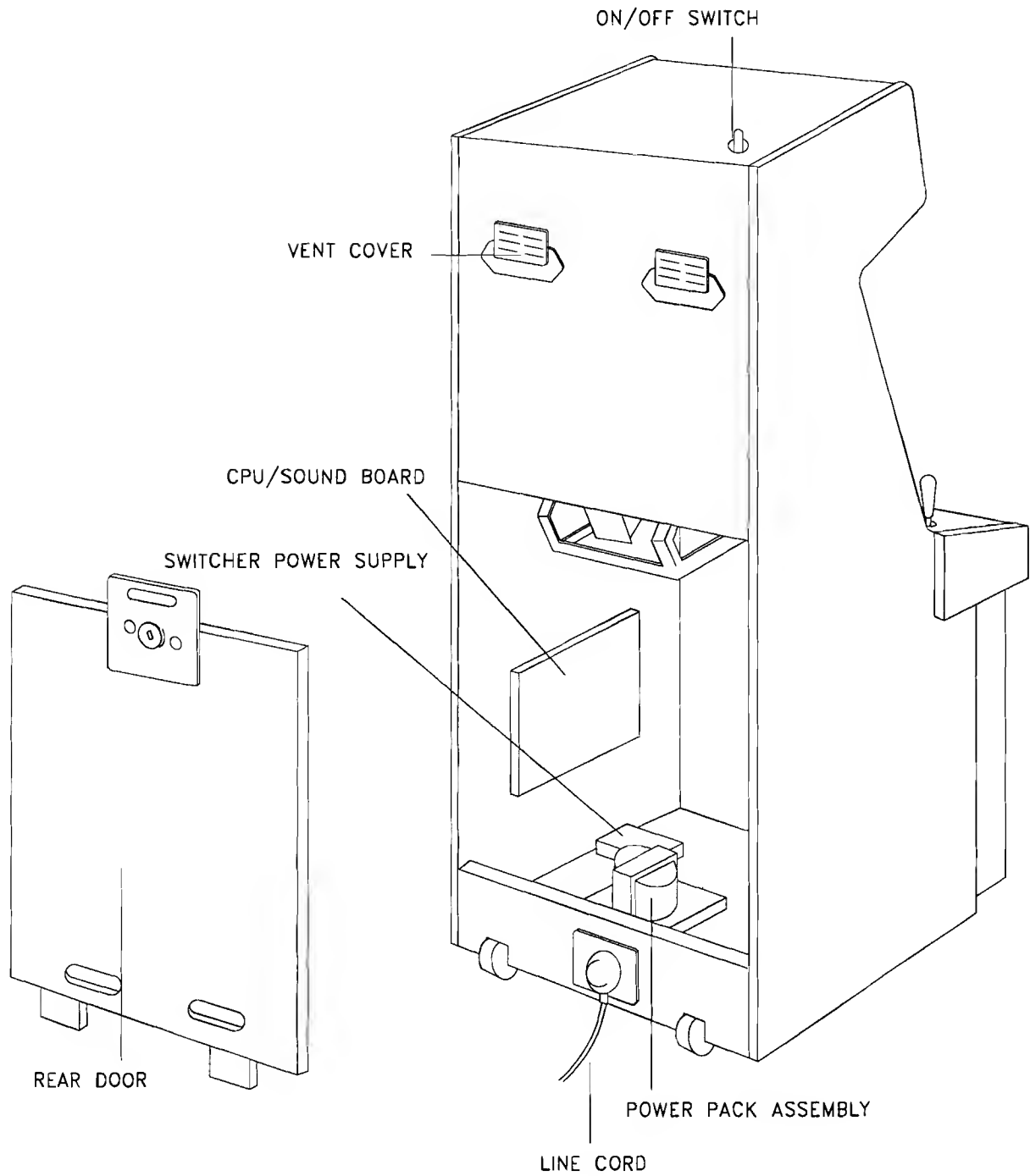
7. Determine the value of your line voltage with a meter. Then, check the jumper wires to the main power supply transformer. Be sure it is jumpered to correspond to your local line voltage value. If necessary, change the jumper wires to the transformer in accordance with the Voltage Selection Chart in Section 3.
8. Replace the rear door and screw (lock) it securely. NOTICE: Tamper proof screws are included in the spare parts bag. These screws are optional and may be used to secure the rear door panel. The T20 wrench is used for the installation of these screws. Close and lock the front coin and cash box doors.
9. To attach the line cord, remove the four Phillips-head screws that mount the line cord cover plate to the rear of the cabinet. Match the prongs on the plug with the holes in the receptacle and push the line cord securely into place. Make sure the cord aligns with the indentation of the plate, (indentation should point toward the bottom of the cabinet). Remount the line cord cover plate.
10. Plug the game into a grounded (3-terminal) AC wall outlet. Switch ON the game, using the ON/OFF switch located on the upper left rear of the cabinet.

CABINET ASSEMBLY Front View



CABINET ASSEMBLY

Rear View



SERVICING

◆ Servicing the Control Panel

Switch off power to the game and open the coin door. The control panel is held in place by two latches (located inside the cabinet) which provide constant pressure on the strikes. To release the latches, reach through the coin door opening toward the right and left sides of the cabinet. *Do not reach straight back through the coin door or you could damage the monitor control board.* Lift the latch handle and unhook the wire fasteners. Grip the joysticks and carefully tilt the control panel back on its hinge.

To return the control panel to its normal position, carefully lean it forward until it rests on the cabinet. Be careful not to let the control panel slam down onto the cabinet, or to pinch any wires. Always re-clasp the latches.

◆ Removal of the Viewing Glass

Switch off power to the game and open the control panel. Remove the five hex-head screws and the black metal strip at the bottom of the viewing glass. Carefully, slide the glass from the side grooves and lift it clear of the cabinet.

◆ Removal of the Monitor Bezel

Switch off power to the game. Open the control panel and remove the viewing glass. Lift the bezel off of the monitor.

◆ Monitor Replacement

We recommend that you read the SAFETY NOTICES section thoroughly before beginning this procedure.

Switch off power to the game. Remove the viewing glass and the monitor bezel. Completely disconnect the monitor from all of its cabling. Remove the four flange nuts securing the monitor's mounting flanges to its mounting panel. Pull the monitor carefully from the cabinet.



CAUTION

The monitor does not require an isolation transformer. However, when servicing the monitor on a test bench, YOU MUST ISOLATE THE MONITOR FROM LINE VOLTAGE WITH AN ISOLATION TRANSFORMER. THE MONITOR IS HEAVY. BE SURE IT IS FIRMLY SUPPORTED IF IT MUST BE REMOVED FROM THE CABINET.

◆ Removal of the Marquee

Switch off power to the game. Remove the hex-head screws from the black marquee retaining strip located on top of the header. Remove the strip and carefully lift the marquee and the marquee glass from the top of the header. Store the marquee carefully to prevent damage.

◆ Removal of the Fluorescent Light Assembly

Switch off power to the game. Remove the marquee glass and the marquee. The fluorescent bulb is now accessible for replacement. Remove the plastic lamp locks. Grasp the bulb, give it a quarter turn, and remove it from its socket. Carefully, place a new bulb into the socket, and turn to reinstall.

To remove the entire light fixture, disconnect the fluorescent light assembly from its power cable. Remove the screws that hold the assembly to the cabinet then lift out the assembly.

!! WARNING !!

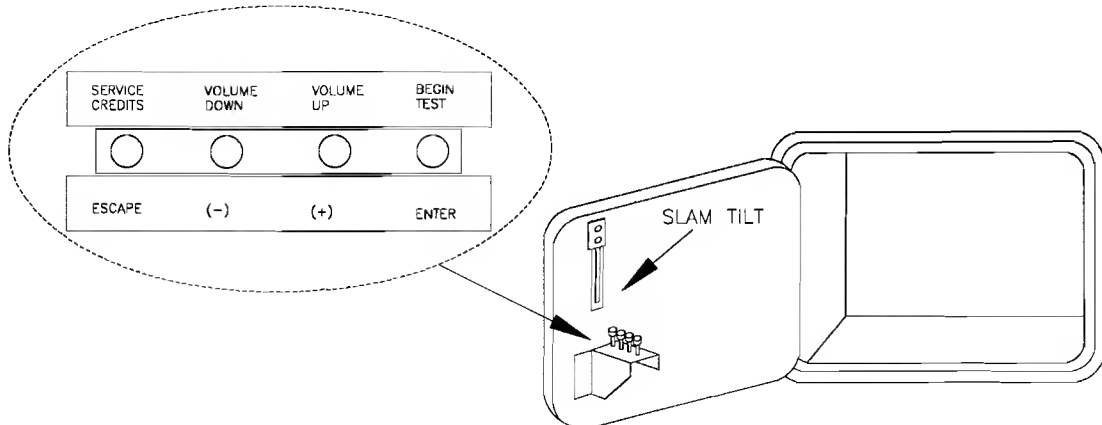
If you drop a fluorescent tube and it breaks, it will implode! Use care in handling.

◆ Removal of the Speakers

Switch off power to the game. Remove the marquee and the marquee glass. The speakers come out from the front of the cabinet. Be sure to disconnect the cabling and remove the nuts on the mounting screws before attempting to remove the speakers from the enclosure. Carefully, reinstall the seals upon completing any task in the speaker enclosure.

◆ Volume Control, Begin Test Switch, and Service Credit Switch

Open the coin door. The game's volume control and diagnostic push-button switches are located on a small bracket on the door. The volume is controlled by the two center buttons. Press the Volume Up or the Volume Down button until the desired sound level is reached. The Begin Test switch, on the right, activates the game's menu system. The Service Credit switch, on the left, allows credits to be allotted for service testing without affecting the game's bookkeeping total.



GAME FEATURES

STARTING UP

Switch on power to the game. A "rug" pattern appears on the screen. When the "rug" pattern ends, the screen shows *Checking Scratch RAMS*, then *Checking ROMS*. (Refer to page 2-5 for proper chip location.) The next screen shows the revision level, the CMOS test results, and the coin setting. The game goes into the Attract Mode.

Insert the desired amount of coins, bills or tokens. Select which player receives the credit by pressing the appropriate Start button. Use the joysticks to select an on-screen character, and any control panel button to confirm your choice. Game play starts automatically once the on-screen characters are chosen.

NOTE

When an error is detected during the Start-up tests, game start-up does not progress, and an error message appears on the screen.

PLAYER CONTROLS

◆ **Start Button**

Each player has a Start button. The Start buttons allow one or two players to begin or continue play.

◆ **Joysticks**

Each player has a joystick which he uses to control an on-screen character. The player can make the on-screen character move, jump or duck.

◆ **High Kick/High Punch Buttons**

These buttons allow the on-screen character to kick or punch an opponent in the upper body.

◆ **Low Kick/Low Punch Buttons**

These buttons allow the on-screen character to kick or punch an opponent in the lower body.

◆ **Block Buttons**

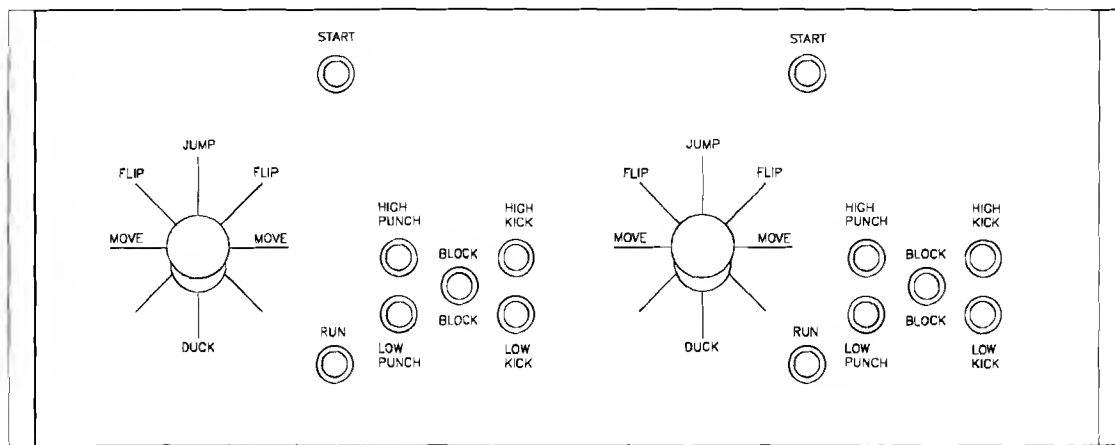
These buttons allow the on-screen character to block an opponent's punch, kick, or special move.

◆ **Run Buttons**

These buttons speed up the on-screen character.

NOTE

Use joystick and button combinations to discover secret moves.



Control Panel

GAME OPERATION

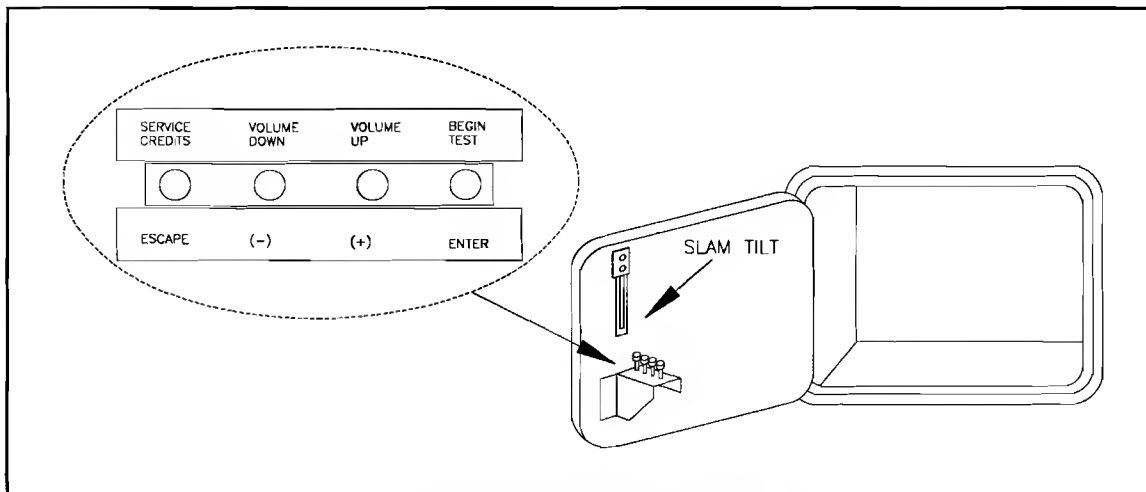
The **MORTAL KOMBAT 3** Control switches are located on a bracket, inside the coin door.

CONTROL SWITCHES

- ◆ **Slam Tilt Switch**
The **Slam Tilt** switch prevents pounding for free games.
- ◆ **Volume Down/Volume Up Buttons**
The **Volume Down** and **Volume Up** push-button switches increase or decrease the volume level of the music and speech. The volume level can be adjusted during the Attract Mode or during menu system operation. For greater profits, set your game's volume level at a nice loud setting.
- ◆ **Begin Test Button**
The **Begin Test** push-button switch enters the game's menu system. Press the Begin Test switch to access any of the menu system functions.
- ◆ **Service Credit Button**
The **Service Credit** push-button switch is a special feature switch that allots credit without affecting the game's bookkeeping total.

NOTE

The coin door must be open for the control switches to work.



Control Panel Switch Locations

MENU SYSTEM OPERATION

OPERATION

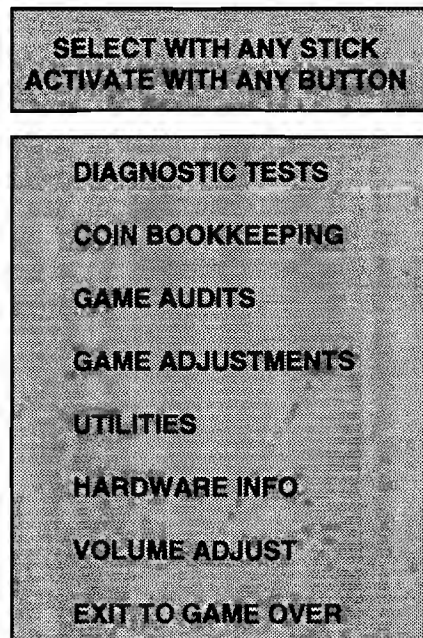
All game audits, adjustments and diagnostics are options of the Main Menu. Each option, in turn, has its own menu that lists several choices which you may act upon as desired.

Press the Begin Test switch on the coin door to open the Main Menu (shown below). Game adjustments, bookkeeping and diagnostics are all accessible from this menu.

Use either joystick to move the cursor up and down the menu screen. Notice that the options are highlighted in sequence. Press any button on the control panel to open a highlighted option.

NOTE

Only highlighted options can be opened.



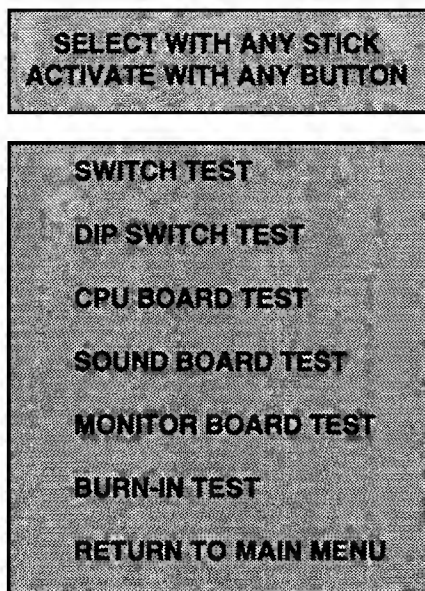
MAIN MENU

To exit the Main Menu and return to the Attract Mode, use either joystick to select EXIT TO GAME OVER and press any button.

DIAGNOSTIC TESTS

Use either joystick to select the Diagnostic Menu and any button to open it. Then, use either joystick to move the cursor up and down the menu and any button to open a highlighted option.

To exit the Diagnostic Menu, use either joystick to select RETURN TO MAIN MENU and press any button.



DIAGNOSTIC MENU

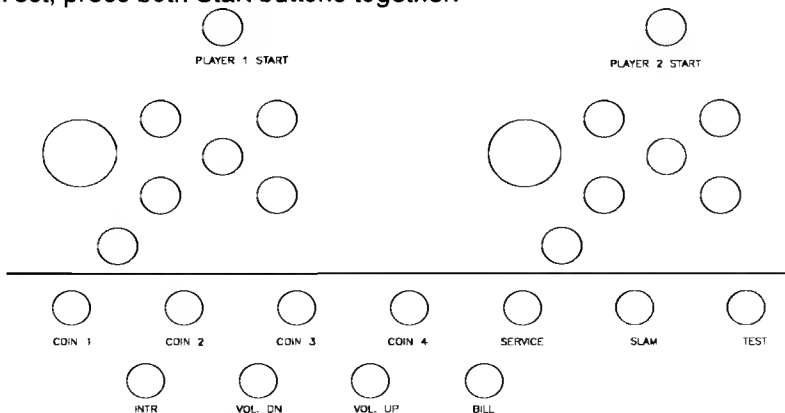
Switch Test

The Switch Test allows the operator to test the switches on the control panel and in the coin door.

Use either joystick to highlight the Switch Test and any button to begin the test.

During the Switch Test the top of the screen shows the control panel switches while the bottom of the screen shows the coin door switches. Press a control panel or coin door switch and the switch location on the screen lights. Release the switch and the screen returns to normal.

To exit the Switch Test, press both Start buttons together.



DIP Switch Test

The DIP Switch Test allows the operator to check or change the position of the DIP Switches on the CPU Board.

Use either joystick to select the DIP Switch Test. Press any button to access the DIP Switch Setting Tables. The screen displays the current settings. To change a setting, slide the switch to the desired position. Check the screen to verify the new setting. *In some cases, setting a function to OFF actually enables the function. For example, setting DIP Switch Coinage to Off enables DIP Switch Coinage.*

Press any button to return to the Diagnostic Menu.

DIP Switch 1 Setting Table

	SW. 8	SW. 7	SW. 6	SW. 5	SW. 4	SW. 3	SW. 2	SW. 1
Coinage								
DIP Switch	Off*							
CMOS	On							
Coin Settings								
USA 1 Ger. 1 Fr. 1	Off*	Off*	Off*					
USA 2 Ger. 2 Fr. 2	On	Off	Off					
USA 3 Ger. 3 Fr. 3	Off	On	Off					
USA 4 Ger. 4 Fr. 4	On	On	Off					
USA ECA Ger. ECA Fr. ECA	Off	Off	On					
N/U N/U N/U	On	Off	On					
N/U N/U N/U	Off	On	On					
Free Play Free Play Free Play	On	On	On					
Country								
USA					Off*	Off*		
Germany					On	Off		
France					Off	On		
Not Used					On	On		
1 Count/Coin							Off*	
Totalizer							On	
Test Switch								Off*
Game Mode								On
Test Mode								

DIP Switch 2 Setting Table

	SW. 8	SW. 7	SW. 6	SW. 5	SW. 4	SW. 3	SW. 2	SW. 1
Violence On	Off*							
On	On							
Blood In Game		Off*						
On		On						
Not Used			Off*					
			On					
Attract Sounds On				Off*				
				On				
Not Used					Off*			
					On			
Dollar Bill Validator						Off*		
Not Installed						On		
Installed								
Do Power Up Test							Off*	
Skip Power Up Test							On	
Not Used								Off*
								On

* Indicates factory setting.

CPU Board Test

The CPU Board Test, much like the Start-up Test, allows the operator to check the RAMS and the ROMS.

Select the CPU Board Test with either joystick. Press any button to start the test.

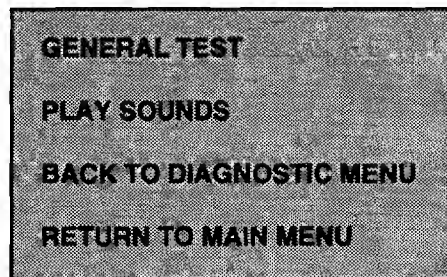
When this test is activated, a "rug" pattern appears on the screen. The screen then changes to show the layout of the RAMS and ROMS. A chip location that is shown as black with a white outline is used. A chip location that is shown as gray with a white outline is not used. During the test, chips are good if they turn green and faulty if they turn red. Turn to page 2-5 for the exact chip location.

The test pauses if a faulty RAM or ROM is detected. Press any button to continue the test.

Sound Board Test

This test allows the operator to listen to some of the sounds this game is capable of producing.

Use either joystick to select the test, then press any button to open the menu. The screen displays two test options. Use either joystick to select an option and any button to begin the test.



SOUND TEST MENU

GENERAL TEST analyzes the sound circuitry. The screen shows a list of error codes. A successful test causes a single "tone" to sound. Detection of a fault causes a series of tones or no tone at all to sound. Press any button to return to the Sound Test Menu.

0 TONES	-	CHECK HARDWARE
1 TONE	-	ALL O.K.
2 TONES	-	BAD U2 CHECKSUM
3 TONES	-	BAD U3 CHECKSUM
4 TONES	-	BAD U4 CHECKSUM
5 TONES	-	BAD U5 CHECKSUM
6 TONES	-	BAD U6 CHECKSUM
7 TONES	-	BAD U7 CHECKSUM
8 TONES	-	BAD U8 CHECKSUM
9 TONES	-	BAD U9 CHECKSUM
10 TONES	-	BAD U10 CHECKSUM

PLAY SOUNDS tests synthesized and digitized sounds from the CPU/Sound board. Advance to the next sound with any button. Use either joystick to end the test.

Select RETURN TO MAIN MENU or BACK TO DIAGNOSTIC MENU and press any button.

Monitor Patterns

The Monitor Patterns Test provides a menu for testing the monitor.

Select the test with either joystick. Press any button to open the test menu. Once the menu is open, use either joystick to select an option, and any button to begin it. Press any button again to return to the Monitor Patterns Menu.



MONITOR PATTERNS MENU

The **RED**, **GREEN** and **BLUE SCREEN** tests fill the screen with either red, green or blue. Press any button to return to the Monitor Patterns Menu.

The **COLOR BARS** test fills the screen with several shades of colors to help with red, green and blue level adjustments. Each color should appear sharp and clear. Press any button to return to the Monitor Patterns Menu.

The **CROSSHATCH PATTERNS** test fills the screen with a grid and a series of dots. The grid and the dots should be clear. The dots should be round. Press any button to return to the Monitor Patterns Menu.

If any of the tests show a need for adjustment, use the proper knobs on the Monitor Controls board. The Monitor Controls board is located just inside the control panel opening, beneath the monitor.

To exit this test, use either joystick to select **RETURN TO MAIN MENU** or **BACK TO DIAGNOSTIC MENU**, then press any button.

Burn-in Test

The Burn-in Test continually repeats the CPU Board Test. Use this test to find intermittent CPU Board problems. *The Audit Table specifies the number of Burn-in cycles that have been successfully completed.*

Use either joystick to select the test, then press any button to activate it. When the Burn-in Test detects an error the test stops and an error message is displayed on the screen.

To exit this test, switch the game off, then on again.

COIN BOOKKEEPING

The Coin Bookkeeping Table records the coin box totals and the game play counters.

Use either joystick to select the Coin Bookkeeping Menu, then press any button to open it.

LEFT SLOT COINS	0
RIGHT SLOT COINS	0
THIRD SLOT COINS	0
FOURTH SLOT COINS	0
BILL VALIDATOR COINS	0
SERVICE CREDITS	0
PAID CREDITS	0
TOTAL PLAYS	0
MORE DETAILED DATA RETURN TO MAIN MENU	

COIN BOOKKEEPING TABLE

LEFT SLOT COINS	0
RIGHT SLOT COINS	0
THIRD SLOT COINS	0
FOURTH SLOT COINS	0
BILL VALIDATOR COINS	0
TOTAL COLLECTIONS	0
CLEAR COIN METERS RETURN TO MAIN MENU	

TOTAL COLLECTION TABLE

To exit Coin Bookkeeping, use either joystick to select RETURN TO MAIN MENU and press any button.

GAME AUDITS

Use joystick to select the Game Audits Menu, then press any button to open it. Page through the available audits by selecting NEXT AUDIT PAGE or LAST AUDIT PAGE. Select RETURN TO MAIN MENU and press any button to exit Game Audits. **Game audits cannot be set. They can only be cleared.**

HOURS GAME WAS ON	0
HOURS PLAYED WITH 1 PLAYER	0
HOURS PLAYED WITH 2 PLAYERS	0
TOTAL PLAYS	0
1 PLAYER CONTINUES TAKEN	0
2 PLAYER CONTINUES TAKEN	0
BURN-IN LOOPS SUCCESSFULLY COMPLETED	0
NEXT AUDIT PAGE RETURN TO MAIN MENU	

PAGE 1 OF AUDIT TABLE

KANO CHOSEN	0
SONYA CHOSEN	0
JAX CHOSEN	0
NIGHTWOLF CHOSEN	0
SUB-ZERO CHOSEN	0
STRYKER CHOSEN	0
SINDEL CHOSEN	0
SEKTOR CHOSEN	0
CYRAX CHOSEN	0
KUNG LAO CHOSEN	0
KABAL CHOSEN	0
SHEEVA CHOSEN	0
SHANG TSUNG CHOSEN	0
LIU KANG CHOSEN	0
SMOKE CHOSEN	0
PREVIOUS AUDIT PAGE RETURN TO MAIN MENU	

PAGE 2 OF AUDIT TABLE

GAME ADJUSTMENTS

The Game Adjustments allow the operator to customize the game.

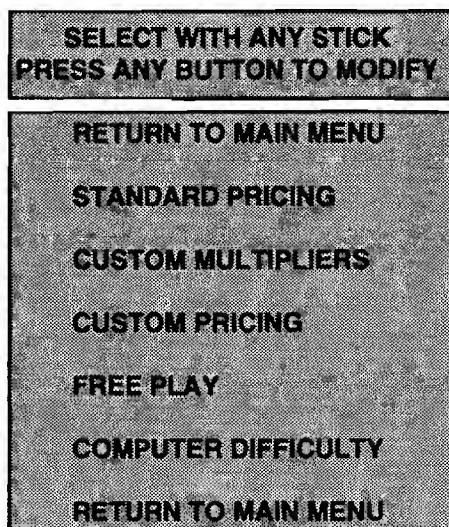
Use either joystick to select the Game Adjustments Menu. Press any button to open the menu.

The Game Adjustments Menu offers several options. Each option has several choices. Use either joystick to select an option, then press any button to open the option. The next menu screen provides a setting value. Use either joystick to change the setting value and press any button to lock it in.

To exit the Adjustments Menu, use either joystick to select RETURN TO MAIN MENU, and press any button.

NOTE

Adjustment values set by DIP SWITCH, override adjustment values set by the menu system.



GAME ADJUSTMENT MENU

Game Adjustments

Standard Pricing

Standard pricing allow the operator to choose any of the "standard" selections from the Standard Pricing Table. See page 1-19.

Modify the setting value with either joystick. Press any button to lock in the new value and return to the Adjustments Menu.

Custom Multipliers

Customize the internal coin chute multipliers for each chute.

Custom Pricing

Custom pricing allows the operator to install pricing other than that of the Standard Pricing Table. Custom pricing also allows the operator to select the maximum amount of credits per game, the amount of credits required to start a game, and the amount of credits required to continue a game. This option is being adjusted from the DIP Switch settings. See page 1-20.

Modify the setting value with either joystick. Press any button to lock in a new value and return to the Adjustment Menu.

Game Adjustments Continued...

Free Play

This option selects free play. The setting choices for this adjustment are:

- No
- Yes
- Factory Setting: No

Computer Difficulty

This option determines how tough the computer opponents are. The setting choices for this adjustment are:

- (1) Extra Easy
- (2) Easy
- (3) Medium
- (4) Hard
- (5) Extra Hard
- Factory Setting: Medium

STANDARD PRICING TABLE

Name	Setting - Coin/Credit	Coin 1	Coin 3	Coin 2	Coin 4	Bills
USA 1	1/25¢ (2 to Start, 2 to Continue)	25¢		25¢		\$1.00
USA 2	1/25¢ (2 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 3	1/25¢ (1 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 4	1/50¢, 3/\$1.00 (1 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 5	1/50¢, 4/\$1.00 (2 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 6	1/50¢ (1 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 7	1/50¢, 3/\$1.00 (1 to Start, 1 to Continue)	25¢		25¢		\$1.00
USA 8	1/50¢, 4/\$1.00 (2 to Start, 2 to Continue)	25¢		25¢		\$1.00
USA 9	1/25¢ (3 to Start, 2 to Continue)	25¢		25¢		\$1.00
USA 10	1/25¢ (3 to Start, 3 to Continue)	25¢		25¢		\$1.00
USA ECA	1/25¢, 4/\$1.00 (2 to Start, 2 to Continue)	\$1.00	10¢	25¢	5¢	\$1.00
German 1	1/1DM, 6/5DM	1DM		5DM		
German 2	1/1DM, 7/5DM	1DM		5DM		
German 3	1/1DM, 8/5DM	1DM		5DM		
German 4	1/1DM, 5/5DM	1DM		5DM		
German 5	1/1DM, 6/5DM	1DM		5DM		
German ECA	1/1DM, 2/2DM, 6/5DM	5DM	1DM	2DM		
France 1	2/5F, 5/10F	5F		10F		
France 2	2/5F, 4/10F	5F		10F		
France 3	1/5F, 3/10F	5F		10F		
France 4	1/5F, 2/10F	5F		10F		
France 5	2/5F, 5/10F, 11/2 x 10F	5F		10F		
France 6	2/5F, 4/10F, 9/2 x 10F	5F		10F		
France 7	1/5F, 3/10F, 7/2 x 10F	5F		10F		
France 8	1/5F, 2/10F, 5/2 x 10F	5F		10F		
France 9	1/3 x 1F, 2/5F	1F		5F		
France 10	1/2 x 1F, 3/5F	1F		5F		
France 11	1/3 x 1F, 2/5F, 5/2 x 5F	1F		5F		
France 12	1/2 x 1F, 3/5F, 7/2 x 5F	1F		5F		
France ECA	1/3 x 1F, 2/5F, 5/2 x 5F	1F	10F	5F		
Canada	1/2 x 25¢, 3/\$1.00	25¢		\$1.00		\$1.00
Swiss 1	1/1F, 6/5F	1F		5F		
Swiss 2	1/1F, 7/5F	1F		5F		
Swiss 3	1/1F, 8/5F	1F		5F		
Italy	1/500 lire	500 lire		500 lire		
UK 1 ECA	1/50P, 3/£1	£1	20P	50P	10P	
UK 2 ECA	1/50P, 2/£1	£1	20P	50P	10P	
UK 3 ECA	1/30P, 2/50P, 5/£1	£1	20P	50P	10P	
UK 4	1/50P, 3/£1	£1		50P		
UK 5	1/50P, 2/£1	£1		50P		
Spain 1	1/100 peseta, 6/500 peseta	100 peseta		500 peseta		
Spain 2	1/100 peseta, 5/500 peseta	100 peseta		500 peseta		
Australia 1	1/3 x 20¢, 2/\$1.00	20¢		\$1.00		
Australia 2	1/5 x 20¢, 1/\$1.00	20¢		\$1.00		
Japan 1	1/100 yen	100 yen		100 yen		
Japan 2	2/100 yen	100 yen		100 yen		
Austria 1	1/5 schilling, 2/10 schilling	5 schilling		10 schilling		
Austria 2	1/2 x 5 schilling, 3/2 x 10 schilling	5 schilling		10 schilling		
Belgium 1	1/20F	20F		20F		
Belgium 2	3/20F	20F		20F		
Belgium 3	2/20F	20F		20F		
Belgium ECA	1/20F	50F	5F	20F		
Sweden	1/3 x 1 krona, 2/5 krona	1 krona		5 krona		
New Zealand 1	1/3 x 20¢	20¢		20¢		
New Zealand 2	1/2 x 20¢	20¢		20¢		
Netherlands	1/1 guilder, 3/2.5 guilder	1 guilder		2.5 guilder		
Finland	1/1 markka	1 markka		1 markka		
Norway	1/2 x 1 krone, 3/5 x 1 krone	1 krone		1 krone		
Denmark	1/2 x 1 krone, 3/5 krone, 7/2 x 5 krone	1 krone		5 krone		
Antilles	1/25¢, 4/1 guilder	25¢		1 guilder		
Hungary	1/2 x 10 forint, 3/2 x 20 forint	10 forint		20 forint		

CUSTOM PRICING

SELECT WITH ANY STICK PRESS ANY BUTTON TO MODIFY
RETURN TO ADJ. MENU
(1) LEFT CHUTE UNITS
(1) RIGHT CHUTE UNITS
(1) THIRD CHUTE UNITS
(1) FOURTH CHUTE UNITS
(2) DBV UNITS
(3) UNITS/CREDITS
(4) UNITS/BONUS
(5) MINIMUM UNITS REQUIRED
(6) CREDITS TO START
(7) CREDITS TO CONTINUE
(8) COINS PER DOLLAR
(9) MAXIMUM CREDIT
RETURN TO ADJ. MENU

CUSTOM PRICING MENU

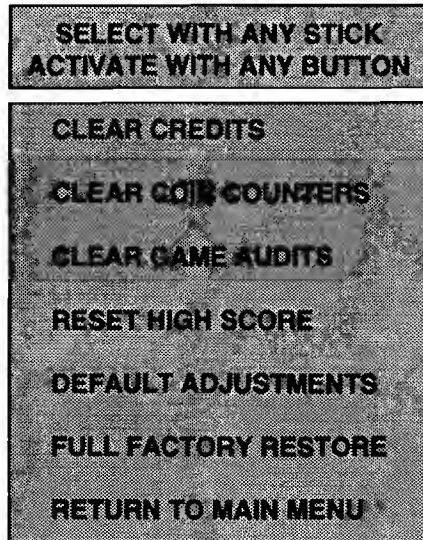
- 1) Coins inserted accumulate units. This adjustment specifies the number of units given for each coin in the fourth chute (see "Units/Credit").
- 2) Coins inserted accumulate units. This adjustment specifies the number of units given for each bill validated (see "Units/Credits").
- 3) This is the number of coin units required to buy one credit.
- 4) There is one bonus credit awarded after this many coin units have accumulated.
- 5) This is the minimum number of units required before any credits are awarded.
- 6) Each player needs this many credits to begin a game.
- 7) Each player needs this many credits to continue a game.
- 8) The detailed bookkeeping screen shows total collection based on this many coins per dollar. (Set to zero to disable the display of money totals.)
- 9) This is the limit for the credit counter. Additional coins inserted will be lost (factory setting: 30).

UTILITIES

The Utilities Menu allows the operator to clear the game's bookkeeping memory.

Use either joystick to select the Utilities Menu, then press any button.

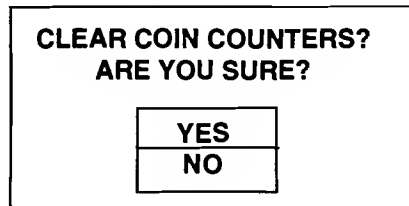
Use either joystick to select a utility. Press any button to activate the selection.



UTILITIES MENU

Once the selection is made, a dialogue box appears, and the operator can choose to reset the utility.

For example:



Use either joystick to choose a setting value. Press any button to lock in the new setting value.

To exit the Utilities Menu, use either joystick to select RETURN TO MAIN MENU, then press any button.

HARDWARE INFO

The Hardware Information screen gives the date the game was manufactured and the game's serial number.

**HARDWARE INFO
MIDWAY MANUFACTURING COMPANY**

WOLF UNIT

SERIAL NUMBER: XXXXXXXX

DATE OF MANUFACTURE: XX/XX/XXXX

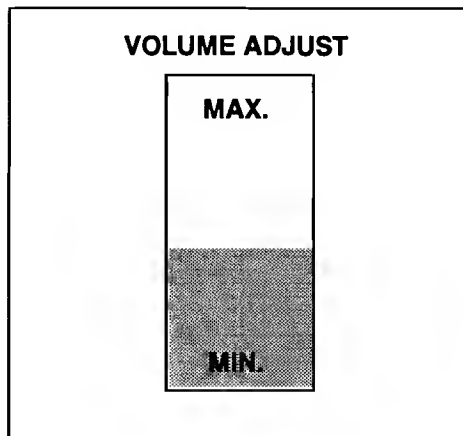
Press any button to exit this screen and return to the Main Menu.

VOLUME ADJUST

The Volume Adjust feature allows the operator to determine the sound and music level of the game.

The volume level can be adjusted from either the Attract Mode or the Menu System. Press the Volume Up button to raise the volume level and the Volume Down button to lower the volume level. Either joystick can also be used to raise or low the volume level. The current volume level is shown with a red bar.

Press any button to return to the Main Menu.



TROUBLESHOOTING

PROBLEM

1) No picture or distorted picture.

2) Turn game On and nothing happens.

3) No sound.

4) No general illumination.

5) Press Start button and nothing happens.

6) No credit given for number of coins inserted.

7) Too many credits for number of coins inserted.

8) Game stays in test mode.

POSSIBLE SOLUTION

1) Check for faulty video board or monitor. Check for disconnected video signal cable.

2) Check line fuse. Check for +5Vdc at pins C, D, 3 and 4 of the JAMMA connector.

3) Check the speaker and the speaker connection to pin L and 10 on the JAMMA connector. Check volume control setting. Check for +12Vdc at pins F and 6 on the JAMMA connector. Check for -5Vdc at pins E and 5 on the JAMMA connector.

4) Check the 1A, S.B. fuse in the AC power pack assembly.

5) Check for open wires between the button and the CPU board. Check for contamination on CPU board pins or the Start button switch blade contacts. Check for proper ground.

6) Check DIP switch coin settings. Check for contamination on the coin switch contacts. Check for an open wire between Coin Switch 1 and pin 16 on the JAMMA connector or Coin Switch 2 and pin T of the JAMMA connector.

7) Check the game pricing settings. Check for a short between pins T & 16 on the JAMMA connector.

8) Check that the switch #8 of DIP switch bank #2 is set to off.

MORTAL KOMBAT

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SECTION
TWO

PARTS

CABINET HARDWARE

Cabinet Assembly	A-19178-40039
Lock Retainer Plate	01-7264
Upper Door Lock Cam	01-8989
Leg Leveler Plate	01-9155
Lock Plate	01-11285
Pad Lock Bracket	01-11286
Key Lock Bracket	01-11287
Door Bracket	01-11291
Shaft Caster	02-4404
20" Vent Hole	03-7602
Door Cam Lock	20-10187
Caster Wheel	20-9627
Coin Door Assembly	09-50000-33
Coin Door Blank w/Lock	09-41000
Mars Chute	01-11379
Coin Meter w/Diode	5580-13476-00
Glass Retainer Bracket	01-9607.1
Marquee Retainer	03-8252-2
25" CRT Bezel	03-8497
Cash Box Tub	03-8863
Leg Adjuster, 3"	08-7377
Clear Marquee Glass	08-7456-4
Clear CRT Glass	08-7456-10
Screened Marquee	31-2316

ELECTRONICS

CPU/Sound Board Assembly	A-18968-40039
Power Supply Assembly	A-19756
Mounting Bracket	01-13420
Power Supply	20-10167

MONITOR

Monitor Support Bracket	01-10819
Monitor Controls PCB Mounting Bracket	01-11251
25" Monitor	5675-13399-02

MANUALS

DBV Installation Instructions	16-9637
Operations Manual	16-40039-101

CONTROL PANEL

Housing & Control Panel Assembly	A-20092
Control Panel Assembly	A-20126
Control Panel Cable	H-20136
Security Latch Bracket	01-11955
Clear Overlay	03-9352
Plate	04-10061
15 Link Safety Chain	20-9275-2
Red Push-button	20-9687-1
White Push-button	20-9687-2
Blue Push-button	20-9687-3
Yellow Push-button	20-9687-5
Control Panel Hinge	20-9841.1
8-way Joystick	20-9978-1
Screened Overlay	31-2314
Base/Housing Assembly	A-20122
Toggle Latch	20-9347

FLUORESCENT LAMP ASSEMBLY

Fluorescent Housing & Bracket	A-15890
Lamp Locks	03-8327
18" Fluorescent Bulb, 15W	24-8809

SPEAKER

Speaker Grille	01-11859
8 Ω Full Range Speaker	5555-13961-00

TRANSFORMER ASSEMBLY

Power Pack Assembly	A-20121		A-19227
Fuse, SB, 1A, 250V	5731-06569-00	OR	5731-06569-00
Fuse, SB, 3A, 250V	5731-10356-00		3731-10356-00
Line Voltage Cable	H-20098		

CABLES

Line Voltage Cable	A-17877-3
Dixie-Narco Adaptor Cable	H-17019
Main Harness Cable	H-19068.1
Speaker Cable	H-19599
Control Panel Cable	H-20136
Line Cordset (North American)	5850-13271-00

CPU/SOUND BOARD ASSEMBLY

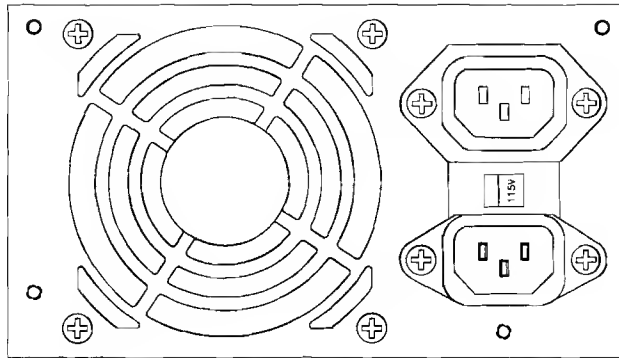
A-18968-40039

<u>Designation</u>	<u>Part Number</u>	<u>Description</u>
B1	5880-11056-00	Battery, 3V Lithium
U57	A-20093	Sound PLD Assy
U35	A-20095	FPGA Assy
U45	A-20096	FPGA Assy
U47	A-20097	FPGA Assy
U2	A-5343-40039-02	EPROM Assy, Music/Speech
U3	A-5343-40039-03	EPROM Assy, Music/Speech
U4	A-5343-40039-04	EPROM Assy, Music/Speech
U5	A-5343-40039-05	EPROM Assy, Music/Speech
U133	A-5343-40039-06	EPROM Assy, Image
U132	A-5343-40039-07	EPROM Assy, Image
U131	A-5343-40039-08	EPROM Assy, Image
U130	A-5343-40039-09	EPROM Assy, Image
U129	A-5343-40039-10	EPROM Assy, Image
U128	A-5343-40039-11	EPROM Assy, Image
U127	A-5343-40039-12	EPROM Assy, Image
U126	A-5343-40039-13	EPROM Assy, Image
U125	A-5343-40039-14	EPROM Assy, Image
U124	A-5343-40039-15	EPROM Assy, Image
U123	A-5343-40039-16	EPROM Assy, Image
U122	A-5343-40039-17	EPROM Assy, Image
U121	A-5343-40039-18	EPROM Assy, Image
U120	A-5343-40039-19	EPROM Assy, Image
U119	A-5343-40039-20	EPROM Assy, Image
U118	A-5343-40039-21	EPROM Assy, Image
U54	A-5343-40039-22	EPROM Assy, Program
U63	A-5343-40039-23	EPROM Assy, Program
U117	A-5343-40039-24	EPROM Assy, Program
U116	A-5343-40039-25	EPROM Assy, Program
U115	A-5343-40039-26	EPROM Assy, Program
U114	A-5343-40039-27	EPROM Assy, Program
P3	5791-12461-05	Header, 5-pin
P9	5791-12461-07	Header, 7-pin
P10	5791-12461-10	Header, 10-pin
P8, P11, P12	5791-12461-15	Header, 15-pin

CPU/SOUND BOARD ASSEMBLY A-18968-40039



POWER SUPPLY 20-10167

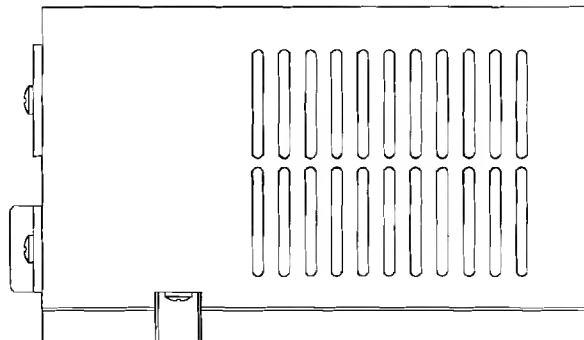
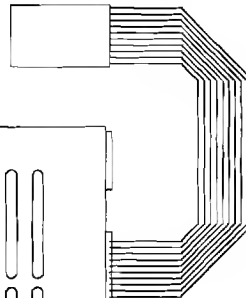
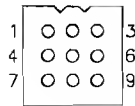


REAR VIEW

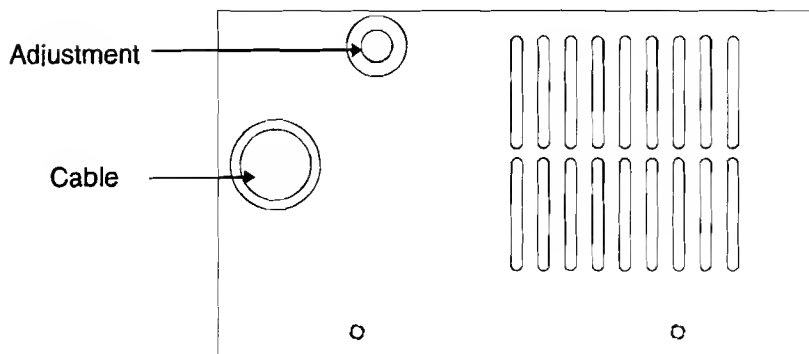
Connector Pin Designation

Pin #	Function	Wire Color
1, 2, 3	+5VDC	Red
4, 5, 6	Ground	Black
7	-5VDC	Yellow*
8	+12VDC	Orange*
9	-12VDC	Blue*

***Note:** Many computer grade power supplies use yellow for +12V, blue for -5V, and white for -12V. This is acceptable as long as the pinout is correct.



SIDE VIEW



FRONT VIEW

MORTAL KOMBAT

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MORTAL KOMBAT
3

SECTION THREE

CABINET WIRING

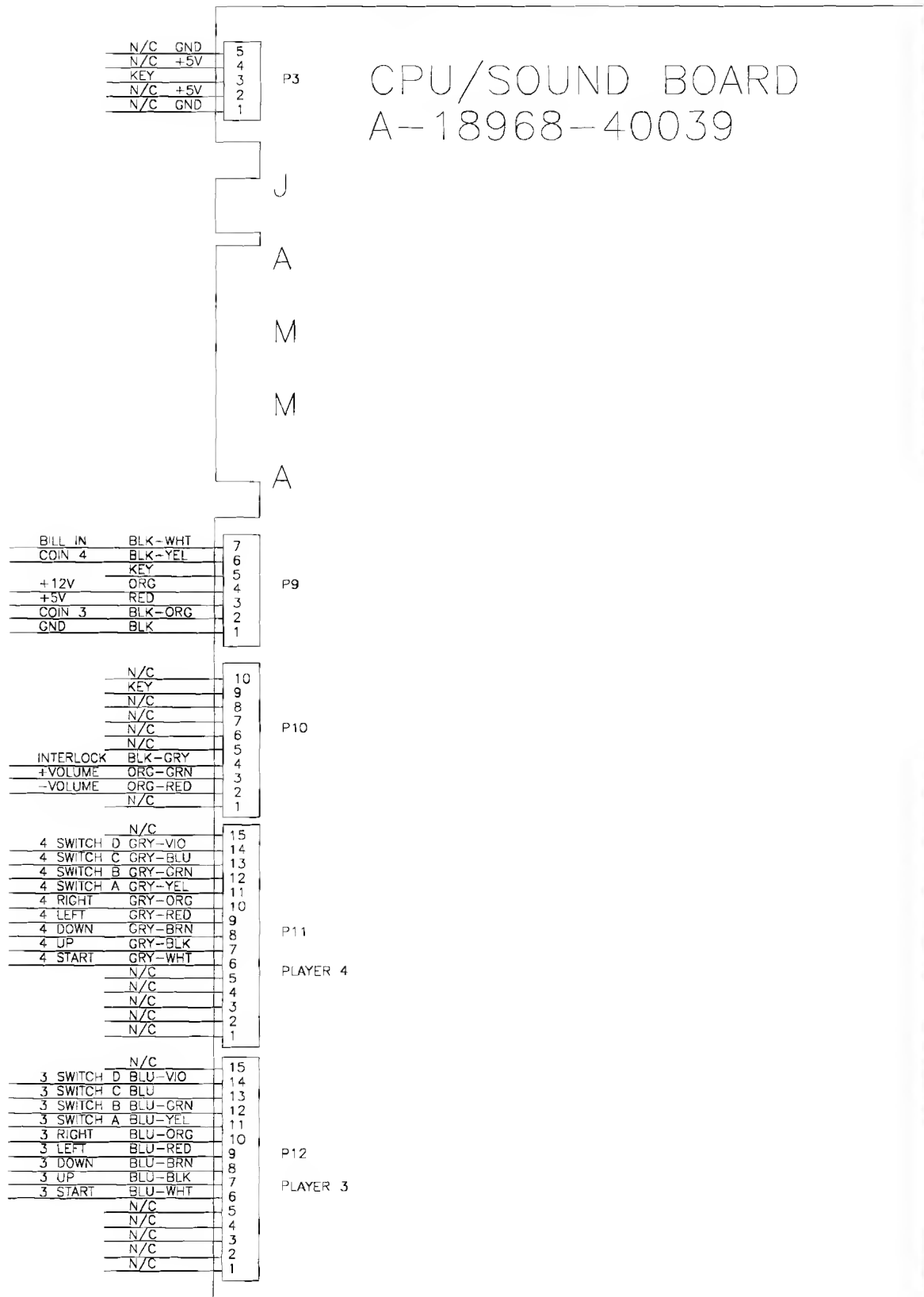
NOTE

PRINTED CIRCUIT BOARD ASSEMBLY SCHEMATICS ARE NO LONGER AVAILABLE.

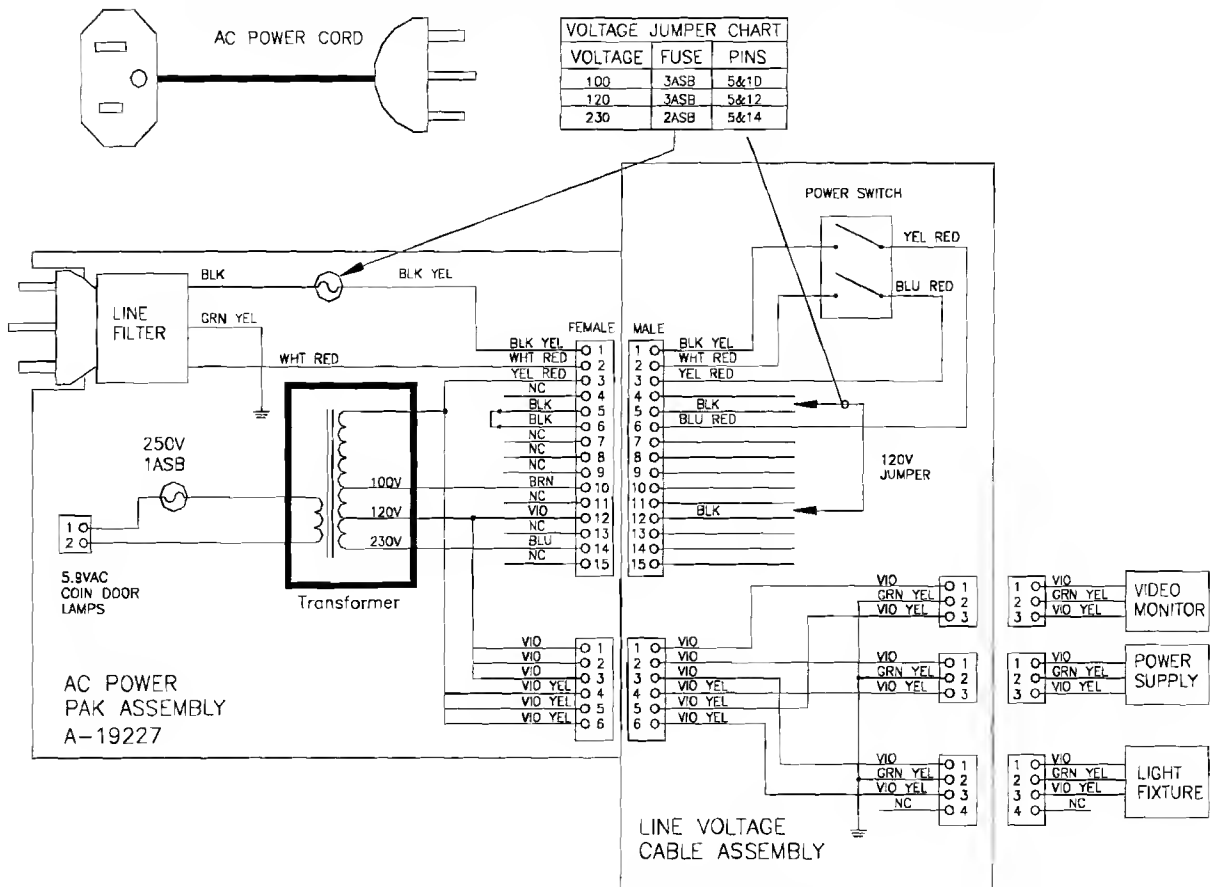
JAMMA Chart

FUNCTION	WIRE COLOR	PIN	PIN	WIRE COLOR	FUNCTION
Ground	Black	A	1	Black	Ground
Ground	Black	B	2	Black	Ground
+5VDC	Red	C	3	Red	+5VDC
+5VDC	Red	D	4	Red	+5VDC
-5VDC	Yellow	E	5	Yellow	-5VDC
+12VDC	Orange	F	6	Orange	+12VDC
	Key	H	7	Key	
Coin Counter 2	Brown-Red	J	8	Brown	Coin Counter 1
	N/C	K	9	N/C	
Speaker-	Brown-Gray	L	10	Red-Gray	Speaker +
	N/C	M	11	N/C	
Video Green	Green	N	12	Red	Video Red
Video Sync	White	P	13	Brown	Video Blue
Service Credits	White-Gray	R	14	Shield	Video Ground
Slam Tilt	Black-Green	S	15	Black-Blue	Test
Coin 2	Black-Red	T	16	Black-Brown	Coin 1
2 Start	Violet-White	U	17	White	1 Start
2 Up	Violet-Black	V	18	White-Black	1 Up
2 Down	Violet-Brown	W	19	White-Brown	1 Down
2 Left	Violet-Red	X	20	White-Red	1 Left
2 Right	Violet-Orange	Y	21	White-Orange	1 Right
2 High Punch	Violet-Yellow	Z	22	White-Yellow	1 High Punch
2 Block	Violet-Green	a	23	White-Green	1 Block
2 High Kick	Violet-Blue	b	24	White-Blue	1 High Kick
Not Used	Violet	c	25	White-Violet	Not Used
	N/C	d	26	N/C	
	N/C	e	27	N/C	
Ground	Black	f	28	Black	Ground
SOLDER SIDE			COMPONENT SIDE		

INTERBOARD WIRING



POWER WIRING AND TRANSFORMER DIAGRAM



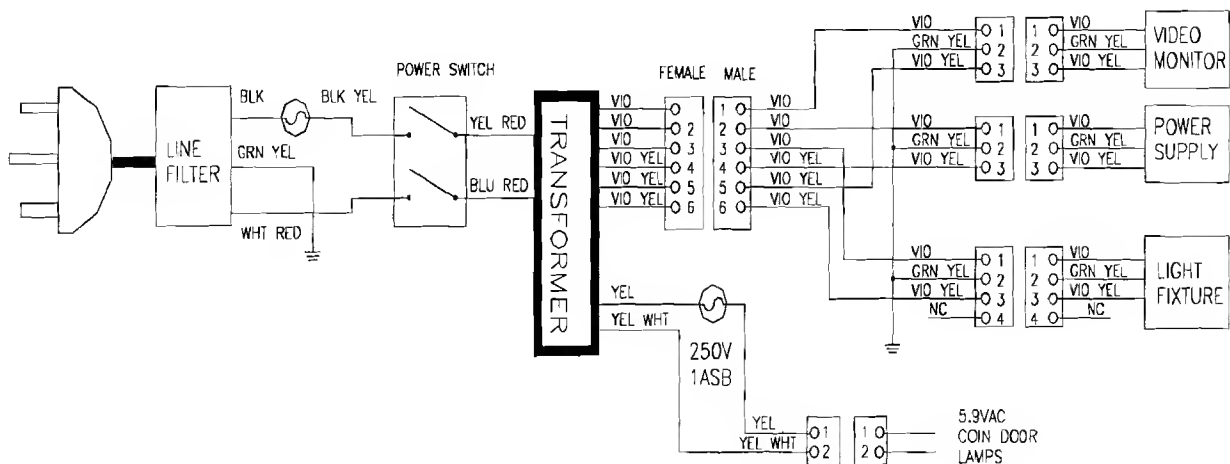
NOTE: All Earth Ground Wires (green-yellow) connect to grounding stud on power pak assembly.

SIMPLIFIED POWER WIRING DIAGRAM

POWER IN



POWER OUT



ALSO SEE POWER WIRING DIAGRAM



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Control Panel Wire Color List

<u>PLAYER ONE</u>		<u>PLAYER TWO</u>	
<u>FUNCTION</u>	<u>WIRE COLOR</u>	<u>FUNCTION</u>	<u>WIRE COLOR</u>
Start	White	Start	Violet-White
Up	White-Black	Up	Violet-Black
Down	White-Brown	Down	Violet-Brown
Left	White-Red	Left	Violet-Red
Right	White-Orange	Right	Violet-Orange
High Punch	White-Yellow	High Punch	Violet-Yellow
Block	White-Green	Block	Violet-Green
High Kick	White-Blue	High Kick	Violet-Blue
Low Punch	Blue-Black	Low Punch	Blue-Yellow
Low Kick	Blue-Brown	Low Kick	Blue-Green
Run (Speed)	Blue-Red	Run (Speed)	Blue

WARNINGS & NOTICES

WARNING

USE OF NON-MIDWAY PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY MIDWAY AUTHORIZED PARTS.

- * For safety and reliability, substitute parts and modifications are not recommended.
- * Substitute parts or modifications may void FCC type acceptance.
- * This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to MIDWAY logos, designs, publications and assemblies. Moreover, facsimiles of MIDWAY equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with MIDWAY components.

WARNING

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Prevent shock hazard and assure proper game operation. Only plug this game into a properly grounded outlet. Do not use a cheater plug to defeat the power cord's grounding pin. Do not cut off the ground pin.

NOTICE

When MIDWAY ships a game, it is in compliance with FCC regulations. Your sticker is proof. If the sticker is missing or damaged, legal repercussions to the owner or distributor of the game may result. If your game does contain an FCC sticker, call MIDWAY immediately.

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3401 N. CALIFORNIA AVE
CHICAGO, IL 60641

REMOVE